INTERMOUNTAIN STATION
Central Reference File
No. 0.73

STATION NOTES
CENTRAL STATES FOREST EXPERIMENT STATION
COLUMBUS 15, OHIO

No. 43 May 1948

PRELIMINARY REPORT OF YIELDS OF LUMBER BY GRADES FROM IOWA TIMBER

Grade 1 saw logs, cut from Iowa timberlands, yield 2½ times as much No. 1 Common and better lumber as Grade 3 logs. A study by the Forestry Section, Iowa Agricultural Experiment Station, in cooperation with the Central States Forest Experiment Station, emphasizes this marked difference. The study was made from 1943 to 1945 with the objectives of grading logs and of finding out the average proportions of lumber grades sawn from each log grade.

Logs were graded on the basis of diameter, length, surface appearance, and defects. Grade 1 logs had to be 12 inches or larger in diameter, 10 feet or longer in length, practically clear and straight. Grade 2 logs were 10 inches and larger, 8 feet and longer, and allowed a few knots and other defects. Grade 3 logs were 8 inches and larger, 6 feet and longer and allowed more defects.

The log grading showed that about 17 percent of the number of logs brought to the sawmills were Grade 1; about 38 percent, Grade 2; and about 45 percent, Grade 3. Of some 1200 logs followed through the mills, about 85 percent were white elm, cottonwood, and northern red oak. These three species comprise about 58 percent of Iowa's annual lumber production. All of them showed a low proportion of Grade 1 logs. Cottonwood, with almost 22 percent of Grade 1 logs, was the best of the three.

Grade 1 elm logs yield about 65 percent No. 1 Common and better lumber. Cottonwood yields 69 percent and northern red oak 76 percent (See Table on Page 2). Of these yields 30 to 34 percent is Firsts and Seconds (FAS). By contrast, Grade 2 logs of the three species yield 48 to 54 percent No. 1C and better, of which only 8 to 10 percent is FAS. Grade 3 logs return 20 to 35 percent No. 1C and better, of which only 2 to 3 percent is FAS. When the logs for all three species are combined, as in the last portion of the table, Grade 1 logs show about 70 percent No. 1C and better in contrast to about 28 percent for Grade 3 logs.

When each species is considered by itself on a mill-run of logs, cottonwood is best with a yield of 55 percent No. 1C and better lumber. White elm comes second with 46 percent, and northern red oak yields 42 percent No. 1C and better.

A higher proportion of Grade 1 saw logs in Iowa's timberlands would increase the value, demand, and market for Iowa logs. Timberland owners can improve the quality of their timber by removing the low-quality trees and applying other known methods of stand improvement.

A detailed report of the study is planned for issuance at an early date.

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Table 1.--Average yield of lumber by species, log grade, and lumber grade.

Log grade	Yield by lumber grade: Firsts and Seconds	Select and No. 1 Com.	No. 2 Com.	No. 3 Com.	Basis: Logs	Net Volume
	Percent	Percent	Percent	Percent	Number	Board Feet
WHITE ELM						
1	29.5	35.6	20.2	14.7	28	8,792
2	9.7	38.7	31.4	20.2	136	17,089
3	2.6	23.2	40.2	34.0	152	12,180
Mill run 1/	12.5	33.2	30.8	23.5	336	40,856
COTTONWOOD						
1	31.4	38.0	19.2	11.4	78	23,179
2	7.6	44.1	28.3	20.0	198	27,451
3	2.8	31.8	32.4	33.0	172	12,692
Mill run 1/	17.0	38.3	24.8	19.9	376	46,611
NORTHERN RED OAK						
1	34.4	41.8	13.5	10.3	59	9,989
2	8.9	45.5	24.9	20.7	96	10,930
3	1.6	17.9	30.8	47.6	115	7,610
Mill run 1/	9.2	33.2	26.0	31.6	211	18,543
ALL THREE SPECIES LISTED ABOVE						
1	31.7	38.4	18.1	11.8	165	41,960
2	8.6	42.6	28.5	20.3	424	55,470
3	2.4	25.3	35.0	37.3	439	32,482
Mill run 1/	13.9	35.4	27.3	23.4	923	106,010

1/Because of the low proportion of Grade 1 and Grade 2 logs studied, it was necessary to include a few extra logs of these grades in order to strengthen the figures on their yield of lumber. These extra logs were not included in the "mill run" figures. Some white elm logs were included in the mill-run figures that were not shown in the individual log-grade figures.

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